

WORK-RELATED STRESSORS AND PSYCHOLOGICAL DISTRESS PREDICT CAREER CHANGE IDEATION AMONG LITHUANIAN HEALTHCARE WORKERS

POVILAS KAVALIAUSKAS^{1,2}, AUGUSTE NOMEIKAITE³, ODETA GELEZELYTE³, EVALDAS KAZLAUSKAS³,
and GIEDRE SMAILYTE^{1,2}

¹ Vilnius University, Vilnius, Lithuania

Department of Public Health, Institute of Health Sciences, Faculty of Medicine

² National Cancer Institute, Vilnius, Lithuania

Laboratory of Cancer Epidemiology

³ Vilnius University, Vilnius, Lithuania

Center for Psychotraumatology, Institute of Psychology

Abstract

Objectives: The study aimed to assess the mental health and well-being of Lithuanian healthcare workers by gathering demographic information, identifying common stressors affecting the work environment, evaluating mental health, and exploring directions for psychosocial care. Additionally, the research explored the prevalence of considering a career change among respondents. **Material and Methods:** The study included 1618 responders who completed an online survey in December 2021 – January 2022. Participants included in this study: physicians, nurses, residents and other healthcare workers. It evaluated their demographics, most common stressors affecting their work environment and mental health on the *Depression, Anxiety and Stress Scale – 21* (DASS-21) scale. Lastly, all responders asked if they had considered changing their occupation to a non-medical job. Univariate analysis was performed using χ^2 and Student's t test, and binary logistic regression evaluated career change predictors. **Results:** Career change was considered by 1081 (66.8%) responders. The main career change predictors were poor working conditions (OR 1.91, $p < 0.001$), direct contact with patients (OR 1.84, $p < 0.001$), lack of career perspectives (OR 1.95, $p < 0.001$), mobbing (OR 1.67, $p = 0.001$) and exhaustion (OR 1.51, $p = 0.005$). After evaluating DASS-21 scores, it was found that 23% of respondents had severe and extremely severe depression symptoms, 27.4% severe and extremely severe anxiety, and 21.4% had severe and extremely severe stress levels. **Conclusions:** Lithuanian healthcare workers are in high distress and have poor mental health. They are in need psychosocial assistance to avoid burnout and staff loss. *Int J Occup Med Environ Health.* 2024;37(3)

Key words:

anxiety, burnout, mental health, depression, healthcare workers, career change

INTRODUCTION

Healthcare workers (HCWs) face high levels of occupational stress due to high professional demands, long and unpredictable working hours, night shifts, poor working conditions, and lack of positive feedback [1–3].

Work-related exhaustion may negatively affect mental health, such as depression, substance use, and suicidal thoughts [2,4]. Multiple studies show a high prevalence of burnout, depression, and anxiety among medical professionals [5–7]. High-stress levels and mental health prob-

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Corresponding author: Povilas Kavaliauskas, Vilnius University, Department of Public Health, Institute of Health Sciences, Faculty of Medicine, M.K. Čiurlionio 21/27, LT-03101 Vilnius, Lithuania (e-mail: povilas.kavaliauskas@mf.vu.lt).

lems affect HCWs from the beginning of their careers and accompany them throughout their training and full-time employment [5,8]. Mata et al. [6] performed a meta-analysis of >50 studies with >8000 physician residents and found that almost one-third suffered from depression or depressive symptoms. Burnout has been shown to affect 40–75% of all doctors [5,9]. Poor psychological well-being of HCWs can lead to poor patient care, increased overall length of hospital stay, re-hospitalizations, and high rates of medical errors [2,10,11]. In the study of anesthesiology residents, 33% of respondents at high risk for burnout and depression reported multiple medical errors [9]. The same results can be seen among nurses [10,12] or physicians [11,13].

The 2019 COVID-19 pandemic has taken a toll on HCWs who were already working under stressful conditions. Globally, 23–40% of healthcare workers suffered from anxiety, 23–37% from depression, and almost half of them (49%) from post-traumatic stress disorder during the COVID-19 pandemic [14,15]. A meta-analysis by Johnset al. [16] concluded that although many of these studies are limited by heterogeneity and inconclusive results, depressive and anxiety symptoms were more common compared to the pre-pandemic period at 21% and 26%, respectively. HCWs working with COVID-19 patients were more likely to experience symptoms of depression and post-traumatic stress than those working in other departments [17].

Norkiene et al. [18] presented how psychological distress predicts career change ideation in the initial stages of the COVID-19 pandemic in Lithuania and the UK. The study conceptualized career change ideation as a cognitive process of rumination about the switch of career and moving out of healthcare services as a significant burnout indicator among medical professionals. The study found that nearly half of the HCWs (49%) considered changing careers and moving outside healthcare systems [18]. Younger age, working in the Lithuanian

healthcare system, having low confidence in the effectiveness of the personal protective system, higher depression and stress levels, and lower psychological well-being was significantly associated with an increased career change ideation. This study in Lithuania was conducted on a sample of HCWs in intensive care. However, we hypothesized that these mental health problems are not specific to intensive care staff but prevalent among various other healthcare worker groups in Lithuania.

Occupational burnout emerges from prolonged, unaddressed work stress and consists of 3 main parts: emotional exhaustion, depersonalization, and low personal achievement [19]. Burnout, by its definition, is a condition that emerges from experience at work. In addition to this, the job demands-resources (JD-R) model [20] divides work-related risk factors into 2 main groups: job demands and job resources. The revised JD-R model [21] explained that if job resources and job demands are imbalanced, they cause strain on person psychological welfare and can cause burnout, and can create negative problems by causing mental and physical health problems. On the other hand, the authors supplemented the JD-R theoretical model with an engagement factor, which is the positive outcome of job resources leading to increased performance.

This study was focused on the medical community because it is a job with extreme demands, but on the other hand, it can be really rewarding. Additionally, people who join this HCWs community are highly motivated and devoted to their jobs. So, it was hypothesized that career change ideation is an indicator of burnout, and the authors wanted to evaluate how broadly it is widespread among Lithuanian HCWs. In addition, the study aimed to evaluate the occupational and mental health factors of Lithuanian HCWs related to career change ideation during the later stages of the COVID-19 pandemic. Furthermore, it was aimed to identify the prevalence and role of various risk factors associated with the mental

health of HCWs. Finally, the study explored potential directions for the development of psychosocial care for HCWs based on the findings.

MATERIAL AND METHODS

Participants and procedure

The study data was collected in December 2021 – January 2022 via an online platform designated for surveys. The invitation to participate in the study was distributed through various professional unions and associations, internal hospital networks, and Lithuanian HCWs' social networks. All professional organizations and professional unions that are registered in Lithuania and whose contact information is possible to acquire were invited to participate. There were no specialty-related selection criteria used to recruit participants for the survey. Two additional reminders were sent to invite HCWs to participate in the survey after the release of the initial invitation. All HCWs were invited to participate in this study to distinguish different medical professions as possible risk factors.

In total, 2354 responders opened the online survey, and 1653 fully completed the questionnaire. After excluding non-medical personnel, 1618 comprised the final sample and were included in data analysis. The participants' age ranged 19–76 years, and 88.4% were women. Detailed occupational and sociodemographic characteristics of the study participants are presented in Table 1.

Sociodemographic and occupational characteristics

General demographic statistics were collected such as gender, age, relationship status, profession, type of work, level of medical service provision, size of the city, where they work, workload and work experience after finishing training. A detailed search of the literature to identify factors that are associated with poorer mental health was performed. A combined list of negative factors affecting mental health was extracted from a high-volume meta-

analysis and proven to be statistically significant as factors affecting burnout or depressiveness [2,19–23]. This list consists of these factors: poor working conditions, high workload, work with patients, lack of professional development, lack of career perspectives, managers, mobbing and exhaustion. The participants could check if one or another factor affected them. The factors were presented in items formulated in plain, daily language without additional explanations.

Psychological distress

The *Depression, Anxiety and Stress Scale – 21* (DASS-21) questionnaire was used to evaluate depression, anxiety and stress [24]. The DASS-21 is a widely used self-report measure which includes 3 subscales, measuring emotional states of depression, anxiety and stress levels. Each subscale consists of 7 items measured on a 4-point Likert scale ranging from 0 (did not apply to me at all) to 3 (applied to me most of the time). Each subscale gives a score, which is a sum of responses to each subscale question. The severity of each component was graded by its score: depression (normal/mild <7; moderate 7–10; severe >11), anxiety (normal/mild <6; moderate 6–7; severe >8), stress (normal/mild <10; moderate 10–12; severe >13). In the present study, Cronbach's α for each subscale in the current study was good: 0.89 (depression), 0.82 (anxiety) and 0.86 (stress). Previous studies supported the validity of the Lithuanian version of the DASS-21 scale [18,25]

Career change ideation

A single item is whether, in the last 12 months, the person had thought about changing their occupation to a non-medical job. Responders had 2 possible answers: yes or no.

Data analysis

Logistic binary regression was performed to assess the multivariate analysis of career change ideation pre-

Table 1. Characteristics of the study sample of Lithuanian healthcare workers who completed an online survey in December 2021– January 2022

Variable	Participants (N = 1618)
Gender [n (%)]	
male	182 (11.2)
female	1431 (88.4)
other	5 (0.3)
Age [years] (M±SD)	40.43±12.61
Relationships [n (%)]	
not in a long-term relationship	336 (20.8)
in a long-term relationship	1282 (79.2)
Professions [n (%)]	
physician	561 (34.7)
resident	124 (7.7)
nurse	588 (36.3)
other	345 (21.3)
Field of work [n (%)]	
therapeutic specialist	192 (11.9)
surgical specialist	129 (8.0)
paediatric specialist	49 (3.0)
family medicine doctor	101 (6.2)
odontologist	90 (5.6)
resident doctor	124 (7.7)
nurse	588 (36.3)
other licensed medical worker	267 (16.5)
other medical worker (unlicensed nurse assistants included)	78 (4.8)
Type of work [n (%)]	
outpatient	904 (55.9)
inpatient	751 (46.4)
rehabilitation	118 (7.3)
nursing	185 (11.4)
emergency department	336 (20.8)
intensive care unit	138 (8.5)
Level of medical service provision [n (%)]	
primary	706 (43.6)
secondary	715 (44.2)
tertiary	617 (38.1)

Variable	Participants (N = 1618)
Primary workplace location	
1 of the 5 biggest cities	1200 (74.2)
another smaller city	335 (20.7)
township/rural area	83 (20.7)
Workload [n (%)]	
<1 FTE	706 (43.6)
1 FTE	160 (9.9)
>1 FTE	752 (46.5)
Work experience after finished training [years] (M±SD)	16.15±13.15

FTE – full-time equivalent.

dictors. Statistical analysis was performed using IBM SPSS 26.0. Univariate analysis using χ^2 and Student's t test was used to investigate whether factors are significantly associated with career change ideation.

Ethical approval

Permission for the study was obtained from the Vilnius Regional Bioethics Committee (ID: 2021/5-1350-826). All participants were thoroughly introduced to the study and consented to participate before starting the online questionnaire. All methods were carried out following relevant local guidelines and regulations.

RESULTS

Work-related stressors

The prevalence of work-related stressors is presented in Table 2. On average, participants faced 3.21 stressors (SD = 1.65). Only 35 participants (2.2%) reported that they had not experienced any of the stressors listed.

Mental health indicators

Detailed scores of DASS-21 subscales evaluating levels of depression, anxiety and stress are presented in Table 3. We found that almost 23% of respondents had severe and

Table 2. Prevalence of work-related stressors among Lithuanian healthcare workers who completed an online survey in December 2021– January 2022

Work stressor	Participants (N = 1618) [n (%)]
Poor working conditions	646 (39.9)
High workload	1007 (62.2)
Work with patients	466 (28.8)
Lack of professional development	383 (23.7)
Lack of career perspectives	422 (26.1)
Managers	596 (36.8)
Mobbing	518 (32.0)
Exhaustion	1152 (71.2)

extremely severe depression symptoms, 27.4% severe and extremely severe anxiety, and 21.4% had severe and extremely severe stress levels.

Predictors of career change ideation

About two-thirds (N = 1081, 66.8%) of the sample considered changing careers in the last 12 months. A χ^2 test for independence indicated a significant association between career change ideation and all tested work stressors (Table 4). An independent-samples t-test was conducted to compare the DASS-21 scores for respondents with career change ideation and without. A significant difference was found in depression, anxiety, and stress scores for respondents with and without ideation.

Hierarchical binary logistic regression was performed to assess the role of factors on the likelihood that respondents would report that they had thought about changing career in the last 12 months. The first model contained 3 independent variables (age, sex and work experience). The complete model was statistically significant, $\chi^2 (2) = 58.07$, $p < 0.001$, indicating that the model was able to distinguish between respondents who reported and did not report a career change ideation (Table 5). The model explained

Table 3. Prevalence of psychological distress in the *Depression, Anxiety and Stress Scale – 21* (DASS–21) among the study sample of Lithuanian healthcare workers who completed an online survey in December 2021– January 2022

DASS-21 sub-scale	Participants (N = 1618) [n (%)]
Depression	
normal/mild	780 (48.3)
moderate	465 (28.7)
severe	204 (12.6)
extremely severe	169 (10.4)
Anxiety	
normal/mild	699 (43.2)
moderate	477 (29.5)
severe	192 (11.9)
extremely severe	250 (15.5)
Stress	
normal/mild	909 (56.1)
moderate	363 (22.4)
severe	276 (17.1)
extremely severe	70 (4.3)

between 3.9% (Cox and Snell R^2) and 5.3% (Nagelkerke R^2) of the variance in career change ideation status and correctly classified 67.9% of cases. Two significant predictors of reporting career change ideation were gender and age, with an odds ratio of 1.44 and 0.95, respectively.

Eight work-related stressors that were identified as statistically significant in univariate analysis (Table 4) were added to the second model, which was statistically significant, $\chi^2 (10) = 296.03$, $p < 0.001$, and significantly improved the model fit of the first model ($\chi^2 (8) = 237.39$, $p < 0.001$). The model explained between 18.0% (Cox and Snell R^2) and 25.0% (Nagelkerke R^2) of the variance in career change ideation status and correctly classified 74.5% of cases.

In the third model, mental health factors – depression, anxiety, stress – were added as predictors. The entire model containing all predictors was statistically significant,

Table 4. The relationship between career change ideation and occupational and sociodemographic factors among Lithuanian healthcare workers who completed an online survey in December 2021 – January 2022

Variable	Participants (N = 1618)		χ^2 (df)	t (df)
	no career change ideation (N = 537)	career change ideation (N = 1081)		
Gender [n (%)]			4.96 (2)	
male	70 (13.0)	112 (10.4)		
female	467 (87.0)	964 (89.2)		
other	0 (0.0)	5 (0.5)		
Age [years] (M \pm SD)	43.77 \pm 13.49	38.76 \pm 11.81		-7.32 (953.33) ***
Relationship status [n (%)]			0.71 (1)	
in a long-term relationship	419 (78.9)	863 (79.8)		
not in a long-term relationship	118 (22.0)	218 (20.2)		
Workload [n (%)]			2.72 (2)	
<1 FTE	221 (41.2)	485 (44.9)		
1 FTE	60 (11.2)	100 (9.3)		
>1 FTE	256 (47.7)	496 (45.9)		
Work experience [years] (M \pm SD)	18.9 \pm 14.0	14.7 \pm 12.5		5.76 (923.73) ***
Workplace location [n (%)]			3.75 (2)	
1 of the 5 biggest	385 (71.7)	815 (75.4)		
another smaller city	126 (23.5)	209 (19.3)		
township/rural area	26 (4.8)	57 (5.3)		
Specialization [n (%)]			6.29 (3)	
physician	185 (34.5)	376 (34.8)		
resident	29 (5.4)	95 (8.8)		
nurse	205 (38.2)	383 (35.4)		
other	118 (22.0)	227 (21.0)		
Work stressor [n (%)]				
poor working conditions			94.97 (1) ***	
no	413 (76.9)	559 (51.7)		
yes	124 (23.1)	522 (48.3)		
workload			36.16 (1) ***	
no	258 (48.0)	353 (32.7)		
yes	279 (52.0)	728 (67.3)		
direct contacts with patients			28.34 (1) ***	
no	428 (79.7)	724 (67.0)		
yes	109 (20.3)	357 (33.0)		

Table 4. The relationship between career change ideation and occupational and sociodemographic factors among Lithuanian healthcare workers who completed an online survey in December 2021 – January 2022 – cont.

Variable	Participants (N = 1618)		χ^2 (df)	t (df)
	no career change ideation (N = 537)	career change ideation (N = 1081)		
Work stressor [n (%)] – cont.				
lack of personal improvement			14.94 (1)***	
no	441 (82.1)	794 (73.5)		
yes	96 (17.9)	287 (26.5)		
lack of career perspectives			55.68 (1)***	
no	459 (85.5)	737 (68.2)		
yes	78 (14.5)	344 (31.8)		
managers			41.43 (1)***	
no	398 (74.1)	624 (57.7)		
yes	139 (25.9)	457 (42.3)		
mobbing			57.35 (1)***	
no	432 (80.4)	668 (61.8)		
yes	105 (19.6)	413 (38.2)		
exhaustion			79.21 (1)***	
no	231 (43.0)	235 (21.7)		
yes	306 (57.0)	846 (78.3)		
Mental health factor (M±SD)				
depression	4.72±3.60	8.58±4.43		18.77 (1283.70)***
anxiety	4.06±3.25	6.38±3.87		12.64 (1248.76)***
stress	7.14±3.46	10.25±3.82		16.43 (1168.43)***

df – degrees of freedom; FTE – full-time equivalent.

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

χ^2 (13) = 424.99, $p < 0.001$, and significantly improved the model fit of the second model (χ^2 (3) = 128.96, $p < 0.001$). The model explained between 24.8% (Cox and Snell R^2) and 34.4% (Nagelkerke R^2) of the variance in career change ideation status and correctly classified 78.4% of cases. The strongest predictor of reporting career change ideation was depression, recording an OR of 1.19. This indicated that respondents with higher levels of depression were more likely to report career change ideation than those with lower levels of depression, controlling for all other factors in the model.

DISCUSSION

The current study evaluated mental health and career change ideation in a large sample of Lithuanian HCWs during the COVID-19 pandemic. The authors found that two-thirds (66.8%) of Lithuanian HCWs have considered quitting their job in the last 12 months to work in a non-medical field. A similar study which collected data in 2020 by Norkiene et al. [18] reported that 59.6% of intensive care staff in Lithuania at the peak of the COVID-19 pandemic outbreak exhibited career change ideation. The data collection was in the later stages of the COVID-19

Table 5. Predictors of reporting career change ideation among Lithuanian healthcare workers who completed an online survey in December 2021 – January 2022

Variable	OR	95% CI	p
Step 1			
gender (male)	1.43	1.01–2.02	0.04
age	0.95	0.93–0.98	<0.001
work experience	1.02	0.99–1.04	0.13
Step 2			
gender (male)	1.6	1.09–2.36	0.017
age	0.97	0.95–0.99	0.006
work experience	1.02	0.99–1.04	0.163
poor working conditions	2.22	1.69–2.92	<0.001
workload	1.62	1.26–2.08	<0.001
direct contacts with patients	2.19	1.65–2.91	<0.001
lack of personal improvement	1.09	0.80–1.51	0.576
lack of career perspectives	2.24	1.61–3.11	<0.001
managers	1.29	0.98–1.71	0.074
mobbing	2.37	1.76–3.19	<0.001
exhaustion	2.27	1.74–2.94	<0.001
Step 3			
gender (male)	1.34	0.89–2.01	0.162
age	0.96	0.94–0.99	0.003
work experience	1.02	0.99–1.04	0.086
poor working conditions	1.91	1.43–2.55	<0.001
workload	1.46	1.17–1.91	0.006
direct contacts with patients	1.84	1.37–2.48	<0.001
lack of personal improvement	1.01	0.73–1.43	0.916
lack of career perspectives	1.95	1.37–2.75	<0.001
managers	1.15	0.85–1.54	0.368
mobbing	1.67	1.22–2.29	0.001
exhaustion	1.51	1.46–2.01	0.005
depression	1.19	1.13–1.25	<0.001
anxiety	0.98	0.93–1.03	0.430
stress	1.06	1.00–1.13	0.05

Bolded are marked as $p < 0.05$.

A hierarchical binary logistic regression was conducted to examine the influence of factors on the probability of respondents reporting that they had thought about changing career within the last year. The first step (model) contained three independent variables (age, sex, and work experience). Eight work-related stressors, identified as statistically significant in univariate analysis, comprised the second step (model). In the third step (model), mental health factors – depression, anxiety, and stress – were added as predictors. A detailed explanation is presented in the results section under the “Predictors of career change ideation” paragraph.

pandemic after 2 waves of COVID outbreak at the end of 2021, beginning in 2022. At the end of our data collection, Lithuania was hit by the third and most intense of the COVID waves, with the highest number of cases [26]. However, vaccines were available during this period, massive vaccination was active in Lithuania, and most HCWs had their vaccine shots [27,28].

Furthermore, it was more known how to treat coronavirus-infected patients; the whole population had a better understanding of this infection and the prevention of spreading the disease as the WHO and the local government released treatment and prevention guidelines [25,29]. Still, the latter study found an even higher prevalence of career change ideation than in data in 2020 [18]. On the one hand, it was an unexpected finding. However, it can also result from fatigue from the prolonged stressors associated with the pandemic and its burden on the healthcare system [30]. On the other hand, the authors evaluated a much broader spectrum of Lithuanian HCW and included people working in other departments.

It was found that demographic characteristics and occupational factors were important in predicting career change ideation. In this study, as in similar studies, younger age and less professional experience were risk factors for burnout [1,14,18,20]. Furthermore, it was identified that work conditions, workload, work with patients, lack of career perspectives, managers, and mobbing were significant factors associated with career change ideation. Work-related factors are commonly known and proven causes of burnout and are highly related to career change ideation [1,20–22,31]. These factors are confirmed through multiple studies with different medical specialties; however, they look typical for all HCWs. The research found no statistically significant differences regarding career change ideations among the profession.

Another important finding of this study was that psychological distress was associated with career change ideation. Healthcare staff who reported career change ideation had

higher levels of depression, anxiety and stress. Occupational stress results in burnout in many medical specialties [32,33]. However, the authors did not find any statistical differences in mental health indicators predicting career change ideation after evaluating different specialties of healthcare professionals. Some data shows that emergency department workers are more prone to burnout [19]. On the other hand, career satisfaction is related to less burnout [22,34].

Evaluation of mental health showed poor psychological condition among Lithuanian HCWs. Only half of the evaluated population had no or only mild symptoms of distress and anxiety subscales. Previous studies showed that psychological distress was associated with increased physical symptoms such as headaches, throat pain, anxiety, lethargy [35] and insomnia [35,36] in HCWs samples. Furthermore, high distress was highly correlated with burnout syndrome [37,38] – moreover, higher distress scores were linked with increased ideation for a career change. Our findings in anxiety prevalence are also comparable to worldwide data, which ranges 22.6–36.3% [15,38–41]. However, anxiety can often be undetected and untreated [42,43]. Anxiety usually starts in medical school, where more than one-third of students globally suffer from it [44]. Still, a detailed evaluation of the most affected population is required.

Logistic regression revealed that depression was the strongest predictor explaining ideation for a career change. These findings are in line with previous studies. A study from Poland compared 2 burnout scales and concluded that depression explains dimensions of exhaustion and a sense of disillusion [45]. A recent meta-analysis revealed that almost one-quarter of all HCWs and 43% of frontline workers in the COVID-19 pandemic suffered from depression [46]. Even though the pandemic is under control, the new variants of COVID-19 pose a significant threat to all HCWs [47]. Multiple strategies can be applied to improve the mental health of HCWs.

Cognitive behavioural therapy, mindfulness-based psychosocial well-being promotion programs, and strict work-hour limitations can improve productivity and help manage burnout in HCWs [2]. In addition, organization-directed interventions may have significant effects on lower burnout rates in HCWs [48], which can be applied to improve personnel wellbeing.

It is essential to look at the results of our study in the context of its limitations. First of all, it was a cross-sectional study. Situation changes and different stressors occur in everyday life. Therefore, longitudinal studies are needed to explore future mental health changes and career change ideation. Secondly, the study was limited in how many questions could be asked in the survey. Thus, future studies may focus on career change ideation using a more elaborate measure. A short survey is essential to keep responders interested and engaged with not overwhelmingly long surveys and letting investigators evaluate a representative part of the population. Thirdly, the authors tried to include as many HCWs as possible. However, the sample was predominantly female. The self-referral to the study of more active or prone to participate responders could cause biased investigation results. Furthermore, items with binary response options were used to evaluate the prevalence of work-related stress factors and career change ideation, which can constrain the generalizability of the results. In addition, the COVID-19 pandemic could have significantly impacted our study findings, mainly because the authors did not have robust pre-pandemic data on mental health and career change ideation in Lithuanian HCWs. Even in the context of the study's limitations, this study is the most extensive study on work-related and mental health stressors among HCWs in Lithuania.

The study reported the results of a large sample of Lithuanian HCWs. Additionally, even though some factors do not significantly correlate with career change ideation, they are affecting more than two-thirds of the population. This is why it is important to address the mental health

of HCWs because, with clearly identified problems, it becomes much easier to address them.

CONCLUSIONS

The study found that 66.8% of Lithuanian HCWs had an ideation to change career outside medicine in the last 12 months. Age, work experience, poor working conditions, workload, work with patients, lack of career perspectives, mobbing, exhaustion, depression, anxiety and stress were significant risk factors for career change ideation. The strongest career change predictors were poor working conditions, direct contact with patients, lack of career perspectives, mobbing and exhaustion. Planned and consistent psychosocial interventions are needed to manage occupational stress and mental health in medical staff, and findings from this study could be used in planning well-being programs for healthcare staff.

Author contributions

Research concept: Povilas Kavaliauskas, Evaldas Kazlauskas, Giedre Smailyte

Research methodology: Povilas Kavaliauskas, Auguste Nomeikaite, Odeta Gelezelyte

Collecting material: Povilas Kavaliauskas, Auguste Nomeikaite

Statistical analysis: Povilas Kavaliauskas, Auguste Nomeikaite, Odeta Gelezelyte

Interpretation of results: Povilas Kavaliauskas, Auguste Nomeikaite, Odeta Gelezelyte, Evaldas Kazlauskas, Giedre Smailyte

References: Povilas Kavaliauskas, Evaldas Kazlauskas, Giedre Smailyte

REFERENCES

1. Molina-Praena J, Ramirez-Baena L, Gómez-Urquiza JL, Cañadas GR, De la Fuente EI, Cañadas-De la Fuente GA. Levels of Burnout and Risk Factors in Medical Area Nurses: A Meta-Analytic Study. *Int J Environ Res Public Health*. 2018 Dec; 15(12):2800.

2. Patel RS, Sekhri S, Bhimanadham NN, Imran S, Hossain S. A Review on Strategies to Manage Physician Burnout. *Cureus*. 11(6):e4805.
3. Hartog CS. [Burnout – a call for action]. *Med Klin Intensivmed Notfallmedizin*. 2019 Nov;114(8):693–8. German.
4. Evanoff BA, Strickland JR, Dale AM, Hayibor L, Page E, Duncan JG, et al. Work-Related and Personal Factors Associated With Mental Well-Being During the COVID-19 Response: Survey of Health Care and Other Workers. *J Med Internet Res*. 2020 Aug 25;22(8):e21366.
5. Lacy BE, Chan JL. Physician Burnout: The Hidden Health Care Crisis. *Clin Gastroenterol Hepatol Off Clin Pract J Am Gastroenterol Assoc*. 2018 Mar;16(3):311–7.
6. Mata DA, Ramos MA, Bansal N, Khan R, Guille C, Di Angelantonio E, et al. Prevalence of Depression and Depressive Symptoms Among Resident Physicians: A Systematic Review and Meta-analysis. *JAMA*. 2015 Dec 8;314(22):2373–83.
7. de Oliveira GS, Chang R, Fitzgerald PC, Almeida MD, Castro-Alves LS, Ahmad S, et al. The prevalence of burnout and depression and their association with adherence to safety and practice standards: a survey of United States anesthesiology trainees. *Anesth Analg*. 2013 Jul;117(1):182–93.
8. Dyrbye LN, Massie FS, Eacker A, Harper W, Power D, Durning SJ, et al. Relationship Between Burnout and Professional Conduct and Attitudes Among US Medical Students. *JAMA*. 2010 Sep 15;304(11):1173–80.
9. Clough BA, March S, Chan RJ, Casey LM, Phillips R, Ireland MJ. Psychosocial interventions for managing occupational stress and burnout among medical doctors: a systematic review. *Syst Rev*. 2017 Jul 17;6:144.
10. Melnyk BM, Orsolini L, Tan A, Arslanian-Engoren C, Melkus GD, Dunbar-Jacob J, et al. A National Study Links Nurses' Physical and Mental Health to Medical Errors and Perceived Worksite Wellness. *J Occup Environ Med*. 2018 Feb;60(2):126–31.
11. Romani M, Ashkar K. Burnout among physicians. *Libyan J Med*. 2014 Jan;9(1):23556.
12. Melnyk BM, Tan A, Hsieh AP, Gawlik K, Arslanian-Engoren C, Braun LT, et al. Critical Care Nurses' Physical and Mental Health, Worksite Wellness Support, and Medical Errors. *Am J Crit Care Off Publ Am Assoc Crit-Care Nurses*. 2021 May 1;30(3):176–84.
13. Hall LH, Johnson J, Watt I, Tsipa A, O'Connor DB. Healthcare Staff Wellbeing, Burnout, and Patient Safety: A Systematic Review. *PloS One*. 2016;11(7):e0159015.
14. Saragih ID, Tonapa SI, Saragih IS, Advani S, Batubara SO, Suarilah I, et al. Global prevalence of mental health problems among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Int J Nurs Stud*. 2021 Sep;121:104002.
15. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsis E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. *Brain Behav Immun*. 2020 Aug;88:901–7.
16. Johns G, Samuel V, Freemantle L, Lewis J, Waddington L. The global prevalence of depression and anxiety among doctors during the COVID-19 pandemic: Systematic review and meta-analysis. *J Affect Disord*. 2022 Feb 1;298:431–41.
17. Di Tella M, Romeo A, Benfante A, Castelli L. Mental health of healthcare workers during the COVID-19 pandemic in Italy. *J Eval Clin Pract*. 2020 Dec;26(6):1583–7.
18. Norkiene I, Jovarauskaite L, Kvedaraite M, Uppal E, Phull MK, Chander H, et al. "Should I Stay, or Should I Go?" Psychological Distress Predicts Career Change Ideation among Intensive Care Staff in Lithuania and the UK Amid COVID-19 Pandemic. *Int J Environ Res Public Health*. 2021 Mar 6;18(5):2660.
19. Maslach C, Jackson SE, Leiter MP. Maslach Burnout Inventory: Third edition. In: *Evaluating stress: A book of resources*. Lanham, MD, US: Scarecrow Education; 1997. p. 191–218.
20. Bakker AB, Demerouti E. The Job Demands-Resources model: state of the art. *J Manag Psychol*. 2007 Jan 1;22(3):309–28.

21. Schaufeli WB, Bakker AB. Job demands, job resources, and their relationship with burnout and engagement: a multi-sample study. *J Organ Behav*. 2004 May;25(3):293–315.
22. Giménez Lozano JM, Martínez Ramón JP, Morales Rodríguez FM. Doctors and Nurses: A Systematic Review of the Risk and Protective Factors in Workplace Violence and Burnout. *Int J Environ Res Public Health*. 2021 Mar 22; 18(6):3280.
23. Galanis P, Vraka I, Fragkou D, Bilali A, Kaitelidou D. Nurses' burnout and associated risk factors during the COVID-19 pandemic: A systematic review and meta-analysis. *J Adv Nurs*. 2021 Aug;77(8):3286–302.
24. Zhou AY, Panagioti M, Esmail A, Agius R, Van Tongeren M, Bower P. Factors Associated With Burnout and Stress in Trainee Physicians: A Systematic Review and Meta-analysis. *JAMA Netw Open*. 2020 Aug 3;3(8):e2013761.
25. Truskauskaitė-Kunevičienė I, Brailovskaia J, Margraf J, Kazlauskas E. Evidence on Resilient Initial Response to COVID-19 Pandemic Among Youth: Findings From the Prospective Study of Mental Health in Two European Countries. *Emerg Adulthood*. 2021 Oct;9(5):566–75.
26. Ramírez-Elvira S, Romero-Béjar JL, Suleiman-Martos N, Gómez-Urquiza JL, Monsalve-Reyes C, Cañadas-De la Fuente GA, et al. Prevalence, Risk Factors and Burnout Levels in Intensive Care Unit Nurses: A Systematic Review and Meta-Analysis. *Int J Environ Res Public Health*. 2021 Oct 30;18(21):11432.
27. López-López IM, Gómez-Urquiza JL, Cañadas GR, De la Fuente EI, Albendín-García L, Cañadas-De la Fuente GA. Prevalence of burnout in mental health nurses and related factors: a systematic review and meta-analysis. *Int J Ment Health Nurs*. 2019 Oct;28(5):1032–41.
28. Henry JD, Crawford JR. The short-form version of the Depression Anxiety Stress Scales (DASS-21): construct validity and normative data in a large non-clinical sample. *Br J Clin Psychol*. 2005 Jun;44(Pt 2):227–39.
29. Lithuania COVID – Coronavirus Statistics – Worldometer [Internet]. [cited 2023 Feb 5]. Available from: <https://www.worldometers.info/coronavirus/country/lithuania/>.
30. Lithuania: WHO Coronavirus Disease (COVID-19) Dashboard With Vaccination Data [Internet]. [cited 2023 Mar 5]. Available from: <https://covid19.who.int>
31. COVID dashboards [Internet]. [cited 2023 Mar 5]. Available from: <https://experience.arcgis.com/experience/cab84dcfe0464c2a8050a78f817924ca/page/Vakcinuotieji/>
32. Therapeutics and COVID-19: living guideline [Internet]. [cited 2023 Mar 5]. Available from: <https://www.who.int/publications-detail-redirect/WHO-2019-nCoV-therapeutics-2022.4>
33. Koronavirusas (COVID-19) ir jo gydymas [Internet]. [cited 2023 Mar 5]. Available from: <https://sam.lrv.lt/lt/koronavirusas-COVID-19-ir-jo-gydymas>. Lithuanian.
34. Chen C, Hauptert SR, Zimmermann L, Shi X, Fritsche LG, Mukherjee B. Global Prevalence of Post COVID-19 Condition or Long COVID: A Meta-Analysis and Systematic Review. *J Infect Dis*. 2022 Apr 16;jjac136.
35. Ong J, Swift C, Bath M, Ong S, Lim W, Al-Naeeb Y, et al. The prevalence of burnout, risk factors, and job-related stressors in gastroenterologists: A systematic review. *J Gastroenterol Hepatol*. 2021 Sep;36(9):2338–48.
36. Yates SW. Physician Stress and Burnout. *Am J Med*. 2020 Feb;133(2):160–4.
37. Galaiya R, Kinross J, Arulampalam T. Factors associated with burnout syndrome in surgeons: a systematic review. *Ann R Coll Surg Engl*. 2020 Jul;102(6):401–7.
38. Pinho R da NL, Costa TF, Silva NM, Barros-Areal AF, Salles A de M, Oliveira APRA, et al. High prevalence of burnout syndrome among medical and nonmedical residents during the COVID-19 pandemic. *PloS One*. 2022;17(11):e0267530.
39. Weiller E, Bisslerbe JC, Maier W, Lecrubier Y. Prevalence and recognition of anxiety syndromes in five European primary care settings. A report from the WHO study on Psychological Problems in General Health Care. *Br J Psychiatry Suppl*. 1998;(34):18–23.
40. Kroenke K, Spitzer RL, Williams JBW, Monahan PO, Löwe B. Anxiety disorders in primary care: prevalence, impairment, comorbidity, and detection. *Ann Intern Med*. 2007 Mar 6; 146(5):317–25.

41. Quek TTC, Tam WWS, Tran BX, Zhang M, Zhang Z, Ho CSH, et al. The Global Prevalence of Anxiety Among Medical Students: A Meta-Analysis. *Int J Environ Res Public Health*. 2019 Jul 31;16(15):2735.
42. Hoff KA, Einarsdóttir S, Chu C, Briley DA, Rounds J. Personality Changes Predict Early Career Outcomes: Discovery and Replication in 12-Year Longitudinal Studies. *Psychol Sci*. 2021 Jan;32(1):64–79.
43. Chew NWS, Lee GKH, Tan BYQ, Jing M, Goh Y, Ngiam NJH, et al. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. *Brain Behav Immun*. 2020 Aug;88:559–65.
44. Dosil Santamaría M, Ozamiz-Etxebarria N, Redondo Rodríguez I, Jaureguizar Alboniga-Mayor J, Picaza Gorrotxategi M. Psychological impact of COVID-19 on a sample of Spanish health professionals. *Rev Psiquiatr Salud Ment*. 2021;14(2):106–12.
45. Golonka K, Mojsa-Kaja J, Blukacz M, Gawłowska M, Marek T. Occupational burnout and its overlapping effect with depression and anxiety. *Int J Occup Med Environ Health*. 2019 Apr 3;32(2):229–44.
46. Olaya B, Pérez-Moreno M, Bueno-Notivol J, Gracia-García P, Lasheras I, Santabárbara J. Prevalence of Depression among Healthcare Workers during the COVID-19 Outbreak: A Systematic Review and Meta-Analysis. *J Clin Med*. 2021 Jul 30;10(15):3406.
47. Lancet T. The COVID-19 pandemic in 2023: far from over. *The Lancet*. 2023 Jan 14;401(10371):79.
48. Panagioti M, Panagopoulou E, Bower P, Lewith G, Kontopantelis E, Chew-Graham C, et al. Controlled Interventions to Reduce Burnout in Physicians: A Systematic Review and Meta-analysis. *JAMA Intern Med*. 2017 Feb 1; 177(2):195.